CCSS Advanced Algebra 3 AA Unit 1: Solving Equations Notes Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |
| --- | --- |
| **I can SOLVE EQUATIONS by GRAPHING** | **I can SOLVE QUADRATIC EQUATIONS by REVERSING OPERATIONS.** |
| To solve the equation $4^{x-2}+x=x^{2}-2x+1$ GRAPHICALLY, you set up the functions:y = \_\_\_\_\_\_\_\_\_\_\_\_\_ and y = \_\_\_\_\_\_\_\_\_\_\_\_\_ in your calculator and find the \_\_ -coordinate of the point of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. | To solve the equation $4(x-5)^{2}+1=101$ by REVERSING OPERATIONS1st: \_\_\_\_\_\_\_\_\_\_\_\_ to both sides of the equation.2nd: \_\_\_\_\_\_\_\_\_\_\_\_ to both sides of the equation.3rd: \_\_\_\_\_\_\_\_\_\_\_\_\_ to both sides of the equation. 4th: \_\_\_\_\_\_\_\_\_\_\_\_\_ to both sides of the equation.The solutions are x = \_\_\_\_\_\_\_ or x = \_\_\_\_\_\_\_\_ |
| **I can SOLVE QUADRATIC EQUATIONS by FACTORING and the ZERO PRODUCT PROPERTY.** | **I can WRITE QUADRATIC FUNCTIONS in GRAPHING FORM (including finding the dilation factor).** |
| To solve the equation $2x^{2}-x-3=0$. First convert to FACTORED FORM using

|  |  |
| --- | --- |
|  |  |
|  |  |

 ( )( ) = 0Solve using the ZERO PRODUCT PROPERTY by setting \_\_\_\_\_\_\_\_ = 0 and \_\_\_\_\_\_\_\_\_\_= 0The solutions are x = \_\_\_\_\_\_ or x = \_\_\_\_\_\_\_. | GRAPHING FORM: $y=a(x-h)^{2}+k$If the vertex of a parabola is (3, -5), replace the \_\_\_\_ with 3 and the \_\_\_\_ with -5.To find the DILATION FACTOR (a), you take any other point on the parabola and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Then solve for a. |
| **I can WRITE QUADRATIC FUNCTIONS in FACTORED FORM (including finding the dilation factor).** | **I can SOLVE ABSOLUTE VALUE EQUATIONS by REVERSING OPERATIONS.** |
| FACTORED FORM: $y=a(x-p)(x-q)$If the x-intercepts of a parabola are x = 2 and x = -8,replace the \_\_\_\_ with 2 and the \_\_\_\_ with -8.To find the DILATION FACTOR (a), you take any other point on the parabola and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Then solve for a. | To solve the equation $-3|x-2|-7= -13$ by REVERSING OPERATIONS1st: \_\_\_\_\_\_\_\_\_\_\_\_ to both sides of the equation.2nd: \_\_\_\_\_\_\_\_\_\_\_\_ to both sides of the equation.3rd: Set \_\_\_\_\_\_\_\_\_\_\_\_\_\_ = \_\_\_\_ or \_\_\_\_\_. 4th: \_\_\_\_\_\_\_\_\_\_\_\_\_ to both sides of the equation.The solutions are x = \_\_\_\_\_\_\_ or x = \_\_\_\_\_\_\_\_ |
| **I can SOLVE SQUARE ROOT EQUATIONS by REVERSING OPERATIONS.** | **I can SOLVE ONE-VARIABLE INEQUALITIES and represent the solutions on a NUMBER LINE and as an INEQUALITY.** |
| To solve the equation $5\sqrt{x-10}+3=18$ by REVERSING OPERATIONS1st: \_\_\_\_\_\_\_\_\_\_\_\_ to both sides of the equation.2nd: \_ \_\_\_\_\_\_\_\_\_ to both sides of the equation.3rd: \_\_\_\_\_\_\_\_\_\_\_\_ to both sides of the equation. 4th: \_\_\_\_\_\_\_\_\_\_\_\_\_ to both sides of the equation.The solution is x = \_\_\_\_\_\_\_  | To find the BOUNDARY POINT, rewrite the INEQUALITY as an \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and solve for x.To determine where the solutions are relative to the BOUNDARY POINT, choose a \_\_\_\_\_\_\_\_\_\_\_\_\_ POINT and check to see if it is a SOLUTION to the INEQUALITY.If the \_\_\_\_\_\_\_\_ POINT is a SOLUTION, all SOLUTIONS to the INEQUALITY are in the \_\_\_\_\_\_\_ region(s) of the number line as the \_\_\_\_\_\_\_\_ POINT.If the \_\_\_\_\_\_\_\_ POINT is NOT A SOLUTION, all SOLUTIONS to the INEQUALITY are in \_\_\_\_\_\_\_\_\_\_ region(s) of the number line as the \_\_\_\_\_\_\_\_ POINT. |